TABLES AND FIGURES

		<u>Page</u>
Table 1:	TLD CUSTOMER PROFILES	8
Table 2:	TLD BUSINESS CUSTOMER PROFILES	9
Table 3:	MARKET SHARES FOR MAJOR INTERNATIONAL ROUTES	23
Table 4:	RATES FOR BAND 1 DAYTIME CALLS FROM PUERTO RICO TO MAJOR INTERNATIONAL DESTINATIONS	25
Table 5:	1992 ACTUAL AVERAGE PER MINUTE CHARGE FOR CALLS FROM PUERTO RICO TO DOMINICAN REPUBLIC	26
Table 6:	1994 DAYTIME TARIFFS FOR CALLS FROM PUERTO RICO TO INTERNATIONAL DESTINATIONS TLD WILL SERVE USING COLUMBUS II	37
Figure 1:	MARKET SHARES - PUERTO RICO INTERNATIONAL TELEPHONE SERVICE	4
Figure 2:	PUERTO RICO DOMESTIC TARIFFS 1986-1994 BAND 1 DAYTIME	16
Figure 3:	CURRENT PUERTO RICO DOMESTIC TARIFFS BAND 1 DAYTIME	18
Figure 4:	PUERTO RICO DOMESTIC TARIFFS 1989-1994 BAND 1 DAYTIME	20
Figure 5:	AT&T AND TLD 1993-1994 TARIFF CHANGES FOR BAND 1 DAYTIME	21

THE ECONOMIC BENEFITS TO PUERTO RICO FROM VIGOROUS TELECOMMUNICATIONS COMPETITION

I. INTRODUCTION

Telefónica Larga Distancia Inc. (TLD) has asked Glassman-Oliver Economic Consultants Inc. to examine the benefits to the Puerto Rican economy from vigorous competition in the market for off-island telecommunications. The benefits from competition may be threatened when regulatory restrictions prevent an important telecommunications provider from competing on a level playing field. This threat is the reason we have also been asked to evaluate the efficacy of such regulatory restrictions and what it would mean for the Puerto Rican economy.

Vigorous competition in this market is relatively new. Indeed, not until the entry of TLD and the advent of equal access in 1989 were Puerto Ricans able to realize the benefits that market competition bestows. Competitive pricing, a greater variety of product and service offerings, efficiency enhancing services (and with them productivity and employment growth) are typical of the benefits to Puerto Rican residential and commercial customers that result from vigorous competition in telecommunications.

These competitive gains have not and do not come easily. While competition clearly benefits customers and more broadly the economy, it is not always kind to all competitors. Incumbent firms with what would otherwise be entrenched market power see the entry of new firms as threatening to the status quo as measured in price

levels, market shares and product offerings. These threats to existing and or anticipated monopoly rents explain the opposition that new entrants and aggressive competitors are often subjected to in the marketplace, the courts and the regulatory agencies.

The strength of competition and the resulting breadth of benefits provided to Puerto Rico are dependent on the regulatory environment in which long distance carriers compete. The limited history of market competition in Puerto Rico is also an indication of its fragility. If the costs of competing may easily be raised by manipulation of the regulatory process, whenever a threatened rival perceives that competition is to become more intense or that its market advantages are to be attenuated, the long term survival of vigorous competition is at stake.

In the analysis that follows, we examine the significant contribution that TLD has made to the development of vigorous competition in the off-island telecommunications market and its prospects for continuing as AT&T's main rival in Puerto Rico. We also analyze the significance of the regulatory environment to maintaining TLD in this important role and measure the consequences for competition and Puerto Rico should TLD face regulatory restrictions on its ability to compete.

We find that a regulatory environment that avoids raising one firm's costs relative to its rivals helps to maintain competition and constrain the exercise of market power. As the Information Superhighway develops, open telecommunications competition is

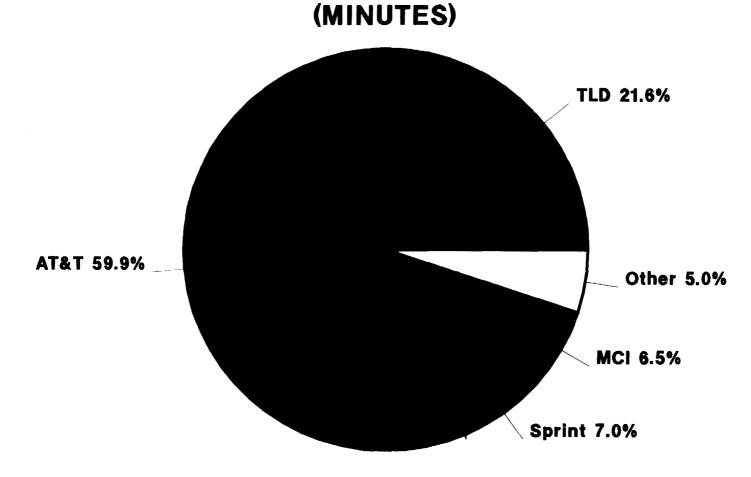
especially critical. Moreover, we find that the most effective means of placing pressure on foreign markets to open up for U.S. carriers is likely to be market forces finding alternative distribution mechanisms that subvert barriers to entry and high prices and not regulations that control access to U.S. technology and the U.S. market.

II. THE COMPETITIVE IMPORTANCE OF TLD RELATIVE TO ITS RIVALS

A. Market Concentration

Only four carriers offer long-distance services that are available to the vast majority of Puerto Rico's 1.1 million access lines. AT&T and TLD serve over 80 percent of the market for offisland services and should, therefore, be considered the only two major competitors. 1/ Figure 1 presents market shares based on 1992 international message telephone service originating in Puerto Rico. Measured in minutes, AT&T has 59.9 percent of the market and TLD

The calculation of market shares presumes that a "relevant market" has been defined. Competition analysts generally define a market to be the narrowest group of products or services for which a hypothetical monopolist could profitably impose a 5 percent price increase. See "Department of Justice and Federal Trade Commission Horizontal Merger Guidelines," April 2, 1992, Section 1.1. In other words, the relevant market must be broad enough so that very few customers would substitute to services outside of that market if prices were to rise. Using this methodology Puerto Rican offisland telecommunications services appears to be the relevant market. Although potential substitutes such as overnight mail service are available, it appears unlikely that many customers would substitute away from telecommunications toward such services to a substantial degree in response to a 5 per cent price increase for off-island telephone services.



Source: Section 43.61 Reports for 1992

has 21.6 percent, while Sprint and MCI have 8.5 percent and 8.8 percent, respectively. Two other firms service a select few business accounts, but do not offer services to households or most business customers. These figures clearly indicate that AT&T is the dominant firm in this market, and that TLD is the principal threat to AT&T's entrenched market position. This conclusion also is supported when market shares are measured in message units or billed revenues.

When market shares are measured in terms of access lines, TLD has a much larger share, 44%. The divergence between TLD's share when measured in terms of traffic and access lines is due to the fact that TLD services a very high proportion of low-volume customers. 4/ In any event, by any measure the combined shares of

The market shares are somewhat different if based on messages, billed revenue, or access lines.

	Int'l	Int'l	Acces:
	Messages	Revenue	Lines
AT&T	57.2%	66.5%	39%
TLD	22.7%	17.2%	448
Sprint	7.6%	6.2%	7ቄ
MCI	7.8%	6.7%	5ቄ
Other	4.7%	3.4%	5ቄ

Source(s): 1992 43.61 reports and TLD "Plan Quinquenal," 1994.

Data is not available to calculate domestic market shares, but it appears that international shares are a good proxy for all offisland shares.

When market concentration figures are used to illustrate market power, they generally are calculated based on dollar sales or unit sales, not the number of customers. See "Department of Justice and (continued...)

AT&T and TLD are 80 percent or more, indicating that these are the primary suppliers to the off-island market.

B. Telefónica Larga Distancia, Inc.

TLD was authorized to compete by the FCC in 1988, ⁵/ and initiated service in 1989. This culminated a decade long effort by TLD and its predecessor in the face of fierce opposition by AT&T and its predecessor to enter the off-island market. ⁶/ As AT&T feared, TLD immediately made its presence known as an aggressive competitor through an active and successful campaign to sign up new customers during the equal access period. Starting from ground zero, TLD has battled AT&T to achieve a substantial share of the market. Neither MCI nor Sprint have been able to achieve half the market share of TLD. TLD has invested over \$45 million in technology and infrastructure since it was established in 1989. Since then, it has grown to 328 employees with revenues of about \$70 million per year.

 $[\]frac{4}{2}$ (...continued)

Federal Trade Commission Horizontal Merger Guidelines," April 2, 1992 (Section 1.4). Therefore, calculating market shares based on minutes of traffic (or dollars of revenue) is the preferred approach.

<u>In re La Telefónica Larga Distancia de Puerto Rico</u>, 3 FCC Rcd. 5937 (1988).

See, e.g., In re Puerto Rico Telephone Co., 92 F.C.C. 2d 1444 (1983), rev'd, All American Cables and Radio, Inc. v. FCC, 736 F.2d 752 (D.C. Cir. 1984); In re Inquiry into Policies to be Followed in the Telecommunications Authorization of Common Carrier Facilities to Provide Telecommunications Service Off the Island of Puerto Rico, 2 FCC Rcd. 6600 (1987).

TLD has been a major force in bringing competition to the Puerto Rican long-distance telephone market. Due in large part to its entry in 1989, the prices of long-distance services have dropped significantly. Both actual and potential competition from TLD has resulted in substantial savings to residential, business, and government customers that might not have occurred in its absence. In addition, since TLD's entry, the services supplied by long-distance carriers in Puerto Rico have expanded dramatically. Much of this expansion is attributable to the new market conditions created by TLD's competitive entry and equal access.

TLD's unique attention to servicing small business and residential customers is an important element of its competitive role in Puerto Rico. Profiles of TLD's customers from a recent customer sample survey it conducted are presented in **Table 1** and **Table 2**. These figures show that TLD's customer base is 71 percent residential. TLD's business customers are predominantly small local businesses (with 50 or fewer employees) focused heavily in the service sector and service-related areas such as wholesale distribution and the retail trade.

TLD services small business and residential customers in spite of their low profitability. For example, large numbers of residential customers selected TLD during the equal access period

Price competition will be discussed in greater detail in Section III below.

TABLE 1 TLD CUSTOMER PROFILES

TLD PRESUBSCRIBED LINES				
Business	16%			
Residential	71%			
Government	10%			
Payphones	3%			

TLD ORIGINATED TRAFFIC				
Residential	66%			
Business	30%			
Government	4%			

TLD BUSINESS ESTABLISHMENT PROFILE				
Smail	70%			
Large	30%			

TLD BUSINESS ESTABLISHMENT ORIGIN				
Local	61%			
Multinational	39%			

TABLE 2
TLD BUSINESS CUSTOMER PROFILES

TLD MARKET SECTOR				
Manufacturing	26%			
Distribution	23%			
Service	22%			
Retail	9%			
Communications &				
Transportation	9%			
Construction	6%			
Finance, Insur. &				
Real Estate	5%			

KIND OF BUSINESS	TLD BUSINESS ESTABLISHMENT PROFILE			
	SMALL	LARGE	LOCAL	MULT.
	-			
Manufacturing	42%	58%	38%	62%
Distribution	74%	26%	68%	32%
Service	77%	23%	75%	25%
Retail	92%	8%	85%	15%
Comm & Transportation	67%	33%	48%	52%
Construction	79%	21%	86%	14%
Fin., Insur. & Real Estate	37%	63%	44%	56%

but do not use a significant quantity of long-distance services. It is costly for TLD to maintain these relatively inactive customer accounts. Movertheless, favoring a long-term view, TLD continues to offer these customers direct access to long distance services if and when they demand them. This market segment has developmental potential and has been largely disregarded by TLD's competitors.

Currently, 94.1 percent of U.S. households have telephone service, compared to only 65.8 percent of Puerto Rican households. The opportunity for growth in telecommunications is obvious and TLD has played a major role in expanding Puerto Rican citizens' access to long-distance telecommunication services. TLD's service to low-volume users is reflected in the fact that TLD averages only \$10.96 in monthly revenue per subscriber line compared to \$29.23 for AT&T.2 While customers throughout the island would suffer if TLD were not able to compete effectively, it is the low-volume residential and small business customers that would suffer most, because it is far from certain that they would receive competitively priced services absent the aggressive competitive presence of TLD.

TLD's costs of servicing these inactive accounts include both its direct servicing costs and its contribution to the Universal Service Fund. Because payments into the Universal Service Fund are based on its number of subscribers, TLD pays 1.15 cents per billed minute into this fund while AT&T pays 0.25 cents per minute. See TLD's "Reply Comments in Support of AT&T Petition for Rulemaking," January 31, 1994, at 2.

 $[\]frac{9}{2}$ Ibid., at 3. These figures are nationwide averages.

In 1993, TLD focused on increasing its traffic volume, particularly among business customers. Tariffs for daytime traffic were revised downward with this goal in mind. Reduced daytime tariffs should increase TLD's domestic and international sales to businesses substantially.

TLD currently offers a wide variety of telecommunication services and is in the process of introducing more. Private lines, 800 service, 900 service, calling-card services, specialized billing services and various discount programs are now available. TLD is planning to introduce videoconferencing, voice mail and packet switching service. These services will be closely competitive with those of AT&T. TLD plans to compete head-to-head with AT&T for major services, as well as new developments in services.

C. AT&T

Prior to 1987, All American Cable & Radio (AAC&R) had a monopoly on off-island service originating in Puerto Rico. In 1987, AT&T purchased this monopoly. Today AT&T is the market leader and TLD is the closest competitor. From Figure 1 we see that AT&T enjoys a 59.9 percent share of international minutes originating in Puerto Rico. AT&T offers a broad range of services to its residential and business customers.

Its tariffs are significantly higher than TLD's, particularly for the primary business rate, Band 1 Daytime, where AT&T currently charges \$0.27 and TLD charges $\$0.20.\frac{10}{}$

As suggested earlier, head-to-head competition between these two carriers is the predominant component of both domestic and international telecommunications long distance competition in Puerto Rico. One demonstration of the close competition between AT&T and TLD is the focus of AT&T's advertising to the public. TLD is the only competitor that merits the attention of AT&T in its Puerto Rican advertisements. An industry's leading firm targeting its competitive efforts on a particular competitor when those two firms' market shares are as high as AT&T's and TLD's weighs heavily toward a presumption that the targeted firm is the primary force in the market, acting as a restraint on the leading firm's exercise of market power. 111/

Well before it battled TLD in the marketplace, AAC&R/AT&T acted to delay TLD's entry by a decade, effectively protecting its monopoly position and postponing the benefits from competition. 12/

Price competition will be discussed in greater detail in Section III.

^{11/} See "Department of Justice and Federal Trade Commission Horizontal Merger Guidelines," April 2, 1992, Section 2.211.

See, e.g., In re La Telefónica Large Distancia de Puerto Rico, 3 FCC rcd. 5937 (1988), In re Puerto Rico Telephone Co., 92 F.C.C. 2d 1444 (1983), rev'd, All American Cables and Radio, Inc. v. FCC, 736 F.2d 752 (D.C. Cir. 1984); In re Inquiry into Policies to be Followed in the Telecommunications Authorization of Common Carrier Facilities to Provide Telecommunications Service Off the Island of Puerto Rico, 2 FCC Rcd. 6600 (1987).

AT&T has continued to oppose virtually every application TLD has filed since it entered the market. This tactic appears to be merely a continuation of its use of the regulatory process to attempt to weaken its major competitors in the marketplace, and to maintain market power.

D. MCI and Sprint

Both MCI and Sprint offer limited services, in large part because many services cannot be cost-justified with such a small share of a relatively small market. (See Figure 1.) For example, unlike TLD, MCI does not offer 24 hour customer service access in Puerto Rico. As a consequence, it cannot provide unlimited access to information about its services, billing, dialing instructions, etc. to customers, as does TLD. Moreover, MCI does not maintain its own Operator Center, but instead contracts with a local carrier for operator services. Particularly for collect calls, which are a major component of domestic and international traffic originated in Puerto Rico, efficient operator services such as those provided by TLD are an important component of adequately serving Puerto Rican customers.

Thus, MCI's services are substantially limited relative to TLD. MCI has only 60 employees in Puerto Rico, about one-fifth of TLD's work force, and Sprint has only 30. With these small work forces MCI and Sprint cannot offer the same range of services as AT&T and TLD.

Although it has a limited presence in Puerto Rico, MCI nevertheless profits from doing business with TLD. TLD routes about 90 percent of its domestic traffic through MCI switches in Miami and New York. Thus, independent of MCI's own Puerto Rican business, MCI gains substantial revenues from TLD's Puerto Rican domestic calling traffic. As TLD's domestic capacity increases, MCI's profits will also increase.

The significance of MCI's competitive role in Puerto Rico is reflected in its pricing. While competition has resulted in several price changes (mostly reductions) by TLD and its other competitors since 1989, MCI has only instituted one change in price (a small reduction in 1991), and has not reacted either to TLD's and Sprint's price cuts, nor for that matter to AT&T's price increases. Similarly, MCI's 800 service charges are significantly higher than TLD's. Somewhat in contrast, Sprint recently has been more aggressive in its pricing than MCI, but still has a very limited market share and presence in Puerto Rico.

III. PRICE COMPETITION AND CONSUMER BENEFITS

A. Domestic Price Competition

Section II illustrated how competition has shaped the Puerto Rican carriers' market shares. Section III will evaluate how this

^{33/} See Figure 4, infra.

competition has affected prices, and will highlight the consumer benefits from this competition.

The FCC's elimination of many regulatory barriers to competitive provision of long-distance services has resulted in great savings in Puerto Rico and throughout the U.S. One study estimates that a typical residential user has seen a reduction in average U.S. prices of long distance services of 45 percent since 1984. TLD's Band 1 daytime tariff is 54 percent lower than the 1984 tariff that Puerto Rican customers paid AT&T's predecessor, AAC&R.

When equal access was initiated in 1989, AT&T's Band 1 daytime rate was \$0.27. Since equal access, TLD's price for Band 1 daytime service has averaged 23 cents while AT&T's has averaged 25 cents. Figure 2 illustrates tariff rates both before and after equal access. We see that the Band 1 daytime tariff fell from \$.41 in 1986 to \$.27 in 1988. Then each competitor's rate hovered near \$.25 (with TLD's rate generally the lowest) until 1992-1993, when Sprint and TLD lowered their rates and AT&T raised its rate. 16/

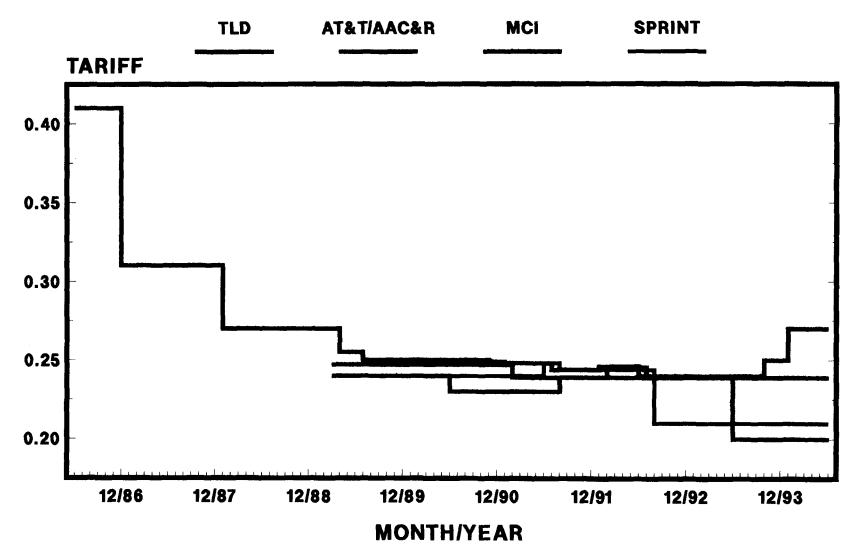
AT&T presumably reduced its Band 1 daytime rates from \$.41 in 1986 to \$.27 in 1988, a reduction of 34%, in anticipation of

U.S. Department of Commerce, <u>The NTIA Infrastructure Report:</u> <u>Telecommunications in the Age of Information</u>, October 1991, at 207.

Source: FCC tariff filings. These averages are weighted averages whereby each price charged is weighted by the length of time that price was in effect.

 $[\]frac{16}{}$ Figure 4, infra, provides a clearer resolution of the postequal access pricing.

PUERTO RICO DOMESTIC TARIFFS 1986-1994
BAND I DAYTIME



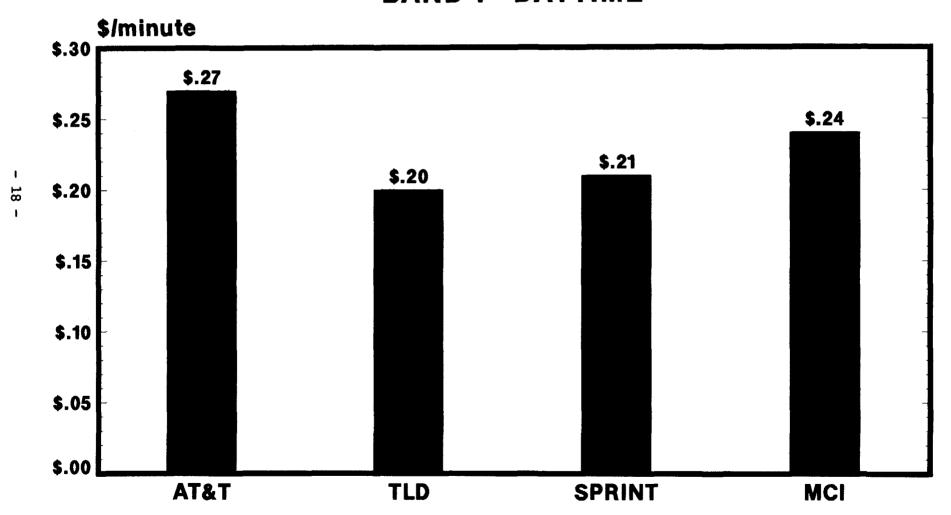
incoming competition from TLD, which was authorized to begin off island service in 1988 and began off-island service in 1989. Therefore, much higher prices would have prevailed if AT&T's monopoly position had not been threatened.

Based on this data it is possible to estimate the total savings to Puerto Rican customers that can be attributed to the competition for domestic traffic from the introduction of equal access through 1994. Multiplying the seventeen cent per minute difference between the rate charged by AT&T's predecessor in 1986 (\$.41) and the average rate charged since equal access (\$.24) times the Puerto Rico domestic long distance market traffic from 1989 to 1994, the savings is \$578 million. This amounts to a savings of \$160 for each of the 3.6 million people living in Puerto Rico. Of course, this consumer savings estimate does not incorporate the value of the many new and improved services provided as a result of greater competition. Given TLD's market share, it appears that the vast majority of these savings are attributable to its competitive presence.

Throughout the five years since equal access, competition from TLD has been instrumental both in offering customers a low price alternative and in applying competitive pressure on the other carriers. As shown in **Figure 3**, TLD's current Band 1 daytime rate

An alternative and very conservative calculation would use the 1989 price as the monopoly benchmark. The \$.03 per minute price reduction from this level has resulted in a total customer savings of \$102 million. The market traffic is estimated in "Premium Interstate Access Minutes By Study Area" for 1989 through 1994.

FIGURE 3
CURRENT PUERTO RICO DOMESTIC TARIFFS
BAND I DAYTIME



is \$0.20, while AT&T's rate is $$0.27.\frac{18}{}$ MCI's rate is \$0.239 and Sprint's rate is \$0.21. By comparison, the average intra-mainland daytime rate charged by AT&T currently is $$0.264.\frac{19}{}$ Thus the TLD daytime rate for calls from Puerto Rico to the mainland, \$0.20, is 24% less than the average AT&T rate for long distance calls within the mainland.

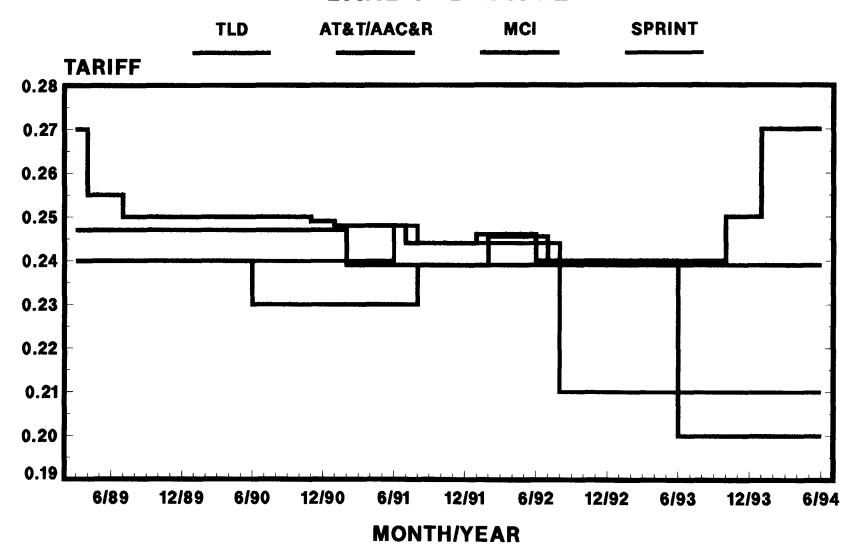
Figure 4 focuses on how tariff rates have changed since equal access. We see how TLD, as well as offering the lowest prices today, has been the lowest priced carrier for Band 1 daytime, the primary category of service for business users, for the majority of the time since equal access.

We also see from Figure 4 that the competitive environment is changing. TLD and Sprint have reduced their prices substantially in 1992 and 1993, while AT&T has significantly increased its price. AT&T imposed a rate increase in October of 1993, and then in January of 1994 imposed an even greater price increase. On Band 1 daytime calls, AT&T increased its prices 4.2 percent in October, 1993 then by another 8 percent in January, 1994! Also in January, 1994, AT&T increased its Band 1 evening rate by 13.3 percent, and its Band 1 night rate by 7.7 percent. As revealed in **Figure 5** below, the predominant recent rate changes have been substantial rate increases by AT&T, and substantial price reductions by TLD.

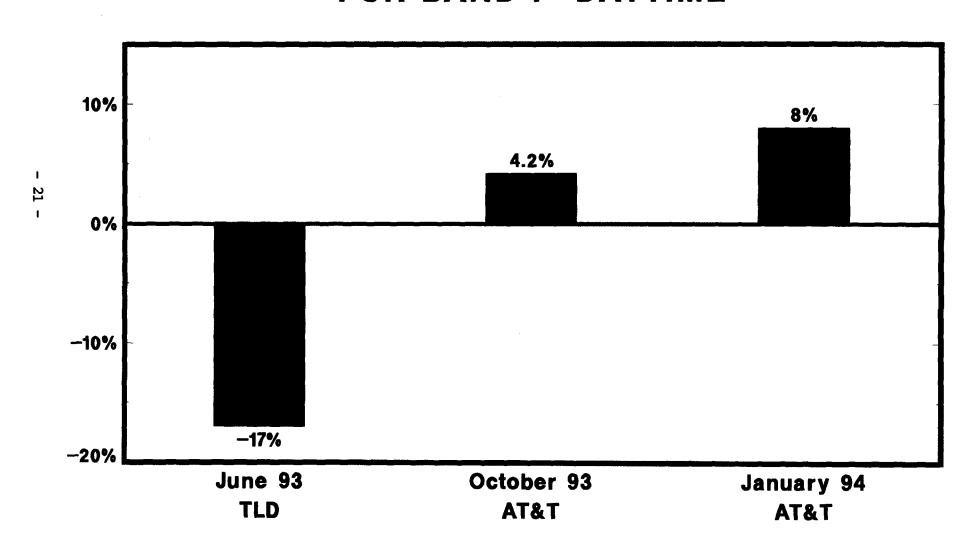
 $[\]frac{18}{}$ TLD's Band 2 and Band 3 rates also are \$0.20. AT&T's Band 2 rate is \$0.27, while its Band 3 rate is \$0.30.

 $[\]frac{19}{}$ Based on AT&T's April 29, 1994 tariff filing.

PUERTO RICO DOMESTIC TARIFFS 1989-1994
BAND I DAYTIME



AT&T AND TLD 1993-1994 TARIFF CHANGES
FOR BAND I DAYTIME



The question naturally arises, why would AT&T raise prices shortly after substantial price cuts by its major rivals? The apparent paradox has a simple answer. AT&T appears to be raising its base rates while providing highly selective discounts to certain valuable high-volume Puerto Rican customers (that are generally multi-national corporations rather than local businesses). AT&T's new strategy is costly to its non-favored customers. The success that AT&T can achieve with this strategy is not yet clear. But what is clear is that a strong TLD will provide a low-cost option to those customers disadvantaged by AT&T's strategy, and a weakened TLD would enable AT&T to continue or even to accelerate its price increase policies, to the detriment of Puerto Rican customers.

B. International Price Competition

As with domestic traffic, TLD and AT&T compete head-to-head for international calls. Based on traffic reports filed with the FCC, market shares as measured in minutes for some of the routes receiving the most traffic from Puerto Rico are presented in **Table** 3.20′ It is clear from these figures that AT&T and TLD are the predominant competitors on all of these routes. It also is interesting to note that TLD has made particularly strong inroads into certain markets such as service to Canada. The erosion of AT&T's traffic and profits on routes such as Puerto Rico - Canada

 $[\]frac{20}{}$ Based on each carrier's 1992 traffic reports.

is indicative of the further inroads that TLD is capable of making against AT&T across the board if it is allowed to compete on a level playing field.

TABLE 3

MARKET SHARES FOR MAJOR INTERNATIONAL ROUTES

	AT&T	TLD	MCI	<u>Sprint</u>
Dominican Republic	54.7%	25.9%	5%	7%
Colombia	60%	26.7%	7.2%	6.1%
Canada	40.5%	45%	10.4%	5.5%
Mexico	64.1%	21.5%	10%	4.4%

Competition for international traffic has resulted in dramatic savings for Puerto Rican customers. **Table 4** illustrates how rates have fallen on major international routes since equal access, and also how TLD's rates today are lower than AT&T's. AT&T's daytime rate prior to equal access for calls to the Dominican Republic (the

largest sub-market for international calls originating Puerto Rico) was \$1.25 for the first minute and \$0.75 for each additional minute. TLD customers now can call the Dominican Republic during weekdays for only \$0.63 per minute. This is a savings of 50 percent for the first minute and 16 percent for each additional minute.

But note that it is not just TLD's customers that obtain the savings due to TLD's competition with AT&T. As Table 4 clearly illustrates, AT&T's customers also benefit as competition from TLD forces down AT&T's rates.

C. Discount Plans

A careful analysis of tariffs in long distance markets requires that attention be paid not just to posted base tariff rate schedules but also to transaction prices that incorporate discount packages offered by the various competitors. Each competitor offers discount plans. TLD offers the <u>STAR</u> discount plan and the <u>Universal</u> discount plan, while MCI offers a plan called <u>Friends & Family</u>, and Sprint offers two plans called <u>The Most</u> and <u>MVP</u>. It is difficult to make generalized comments about AT&T's discount plans, because they are much less standardized than the plans of its competitors. AT&T customizes plans to individual customers, which provides an extreme version of "cream skimming."

The critical attribute of any discount plan is simply what total savings it provides to customers. Comparing the complex